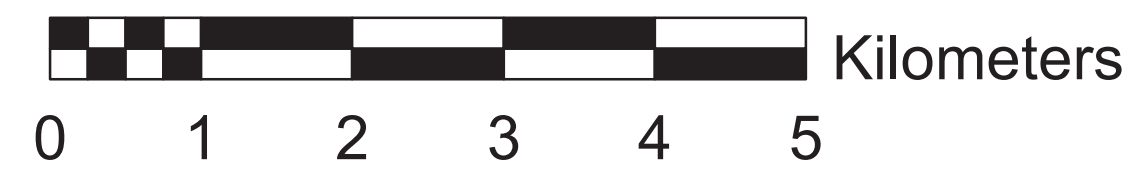
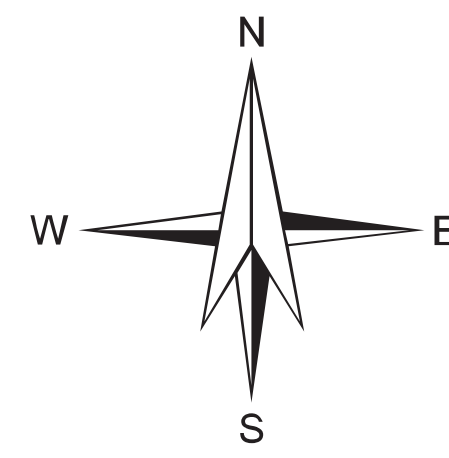


# GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)

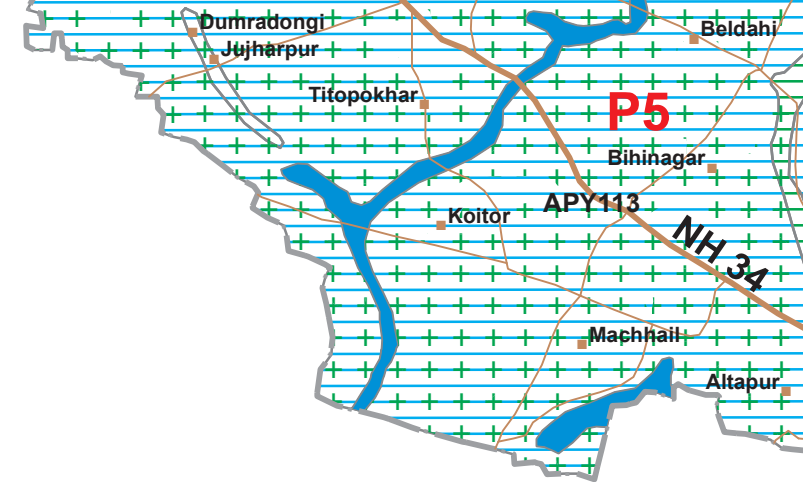


SCALE - 1 : 50,000



MAP SHEET NO.720/14

MALDA & UTTAR DINAJPUR DISTRICTS, WEST BENGAL



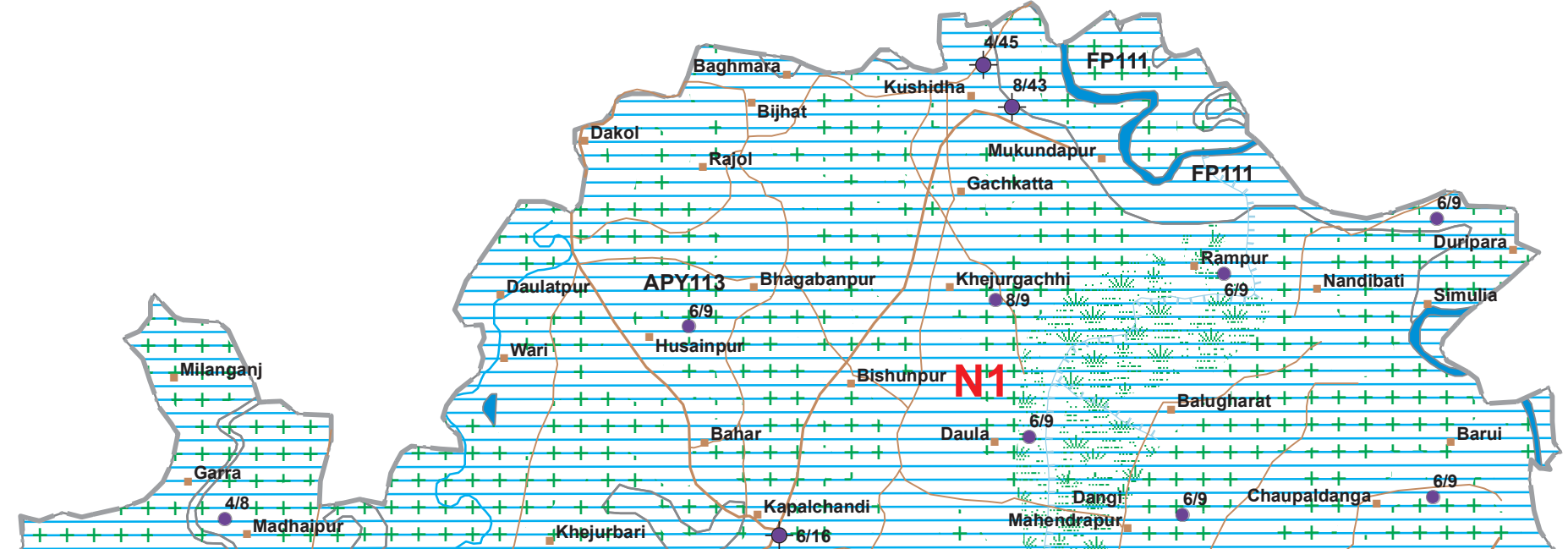
R

A

H

I

B



## LEGEND

MAP UNIT (HYDROGEOLOGIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATES DEPTH RANGE)	GEOLOGICAL SEQUENCE / ROCK TYPE (REPRESENTED IN THE MAP WITH NUMERIC CODE)	GEOMORPHIC UNIT / LANDFORM (REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	DEPTH TO WATER LEVEL PRE / POST-MONSOON (AVERAGE IN METERS) NO. OF WELLS OBSERVED	RECHARGE CONDITIONS BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	GROUND WATER PROSPECTS						RECHARGE STRUCTURES SUITABLE & PRIORITY	REMARKS (PROBLEMS / LIMITATIONS)	
					AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED) (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (% LPM or m <sup>3</sup> /day)	HOMOGENEITY IN THE UNIT RATE OF WELLS (PROBABILITY)	QUALITY OF WATER POTABLE OR NON-POTABLE (BY INDIAN STANDARD FOR NEW POTABLE)			GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)
CM111		Cut-off Meander (CM)	No Well Observed	Good	LS	RW TW	10 - 20m	300-400 LPM	High	P	Nil	Not Required	Highly productive shallow aquifers with good recharge from the river base flow.
FP111		Flood Plain (FP)	9 / 4 1	Very Good	LS	TW	<30m	250-350 LPM	Very High	P	82	Not Required	Receives good recharge and forms shallow aquifer. Overall quality of the water is potable.
APY113		Alluvium (Sand and Silt) (113)	7 / 5 10	Good	LS	TW	25-30 m	200-250 LPM	High	P	95	Not Required	Highly productive aquifer at shallow depth with good recharge.
AC13		Abandoned Channel (AC)	No Well Observed	Very Good	LS	RW TW	10 - 15m	250-300 LPM	Very High	P	Nil	Not Required	Highly productive shallow aquifers with good recharge from base flow.
PC13		Palaeo-channel (PC)	No Well Observed	Very Good	LS	RW TW	10-20m	150 - 200 LPM	Very High	P	Nil	Not Required	Highly productive shallow aquifers with good recharge.

F --- F / --- / --- These are fault / fracture zones, which generally act as conduits for movement of ground water in hard rocks. Along these zones, the yields are significantly higher and wells are likely to be sustainable for longer duration. However, the inferred fractures need to be confirmed by detailed ground surveys.  
 D --- D / Q --- Q / P --- P  
 D --- D / Q --- Q / P --- P These are dykes, quartz reefs and pegmatite veins, which generally act as barriers for ground water movement.

N.B.-The depth range and yield range of wells may vary within the unit because of certain inhomogeneities. Fractures/Linements which are clearly observed / Inferred from the satellite image are indicated on the map. There could be some obscured fractures which also influence the ground water prospects. Locations of the recharge structures shown in the map are tentative. This map is useful for narrowing down the target zones, and exact location on the ground for wells and recharge structures should be identified based on follow-up ground hydrogeological/geophysical surveys.

<b>GROUND WATER PROSPECTS INFORMATION</b> <table border="1"> <tr> <th>YIELD RANGE OF WELLS</th> <th>COLOUR CODE</th> <th>DEPTH RANGE OF WELLS</th> </tr> <tr> <td>&gt; 800 LPM</td> <td>VIOLET</td> <td>SHALLOW (0-10 METERS)</td> </tr> <tr> <td>400 - 800 LPM</td> <td>INDIGO</td> <td>Moderate (10-20 METERS)</td> </tr> <tr> <td>200 - 400 LPM</td> <td>BLUE</td> <td>DEEP (&gt; 20 METERS)</td> </tr> <tr> <td>100 - 200 LPM</td> <td>GREEN</td> <td></td> </tr> <tr> <td>50 - 100 LPM</td> <td>YELLOW</td> <td></td> </tr> <tr> <td>30 - 50 LPM</td> <td>ORANGE</td> <td></td> </tr> <tr> <td>20 - 30 LPM</td> <td>BROWN</td> <td></td> </tr> <tr> <td>10 - 20 LPM</td> <td>PIG</td> <td></td> </tr> <tr> <td>Recharge (with or without recharge tank etc.)</td> <td>RED</td> <td></td> </tr> </table>	YIELD RANGE OF WELLS	COLOUR CODE	DEPTH RANGE OF WELLS	> 800 LPM	VIOLET	SHALLOW (0-10 METERS)	400 - 800 LPM	INDIGO	Moderate (10-20 METERS)	200 - 400 LPM	BLUE	DEEP (> 20 METERS)	100 - 200 LPM	GREEN		50 - 100 LPM	YELLOW		30 - 50 LPM	ORANGE		20 - 30 LPM	BROWN		10 - 20 LPM	PIG		Recharge (with or without recharge tank etc.)	RED		<b>HYDROLOGICAL INFORMATION</b> <table border="1"> <tr> <th>DESCRIPTION</th> <th>SYMBOL</th> </tr> <tr> <td>CANAL TANK IRRIGATED AREA</td> <td>[Symbol]</td> </tr> <tr> <td>GROUND WATER IRRIGATED AREA</td> <td>[Symbol]</td> </tr> <tr> <td>RIVER / STREAM (with sand)</td> <td>[Symbol]</td> </tr> <tr> <td>WATER BODY / SPRING</td> <td>[Symbol]</td> </tr> <tr> <td>CANAL</td> <td>[Symbol]</td> </tr> <tr> <td>RAIN GAUGE STATION</td> <td>[Symbol]</td> </tr> <tr> <td>RECHARGE STRUCTURES SUGGESTED</td> <td>[Symbol]</td> </tr> <tr> <td>PERCOLATION TANK</td> <td>[Symbol]</td> </tr> <tr> <td>WELL</td> <td>[Symbol]</td> </tr> <tr> <td>RECHARGE WELL</td> <td>[Symbol]</td> </tr> <tr> <td>RECHARGE SHAFT</td> <td>[Symbol]</td> </tr> <tr> <td>STORAGE TANK</td> <td>[Symbol]</td> </tr> <tr> <td>WELLS OBSERVED (WITH YIELD RANGE)</td> <td>[Symbol]</td> </tr> <tr> <td>DIKES</td> <td>[Symbol]</td> </tr> <tr> <td>ARTESIAN WELL</td> <td>[Symbol]</td> </tr> </table>	DESCRIPTION	SYMBOL	CANAL TANK IRRIGATED AREA	[Symbol]	GROUND WATER IRRIGATED AREA	[Symbol]	RIVER / STREAM (with sand)	[Symbol]	WATER BODY / SPRING	[Symbol]	CANAL	[Symbol]	RAIN GAUGE STATION	[Symbol]	RECHARGE STRUCTURES SUGGESTED	[Symbol]	PERCOLATION TANK	[Symbol]	WELL	[Symbol]	RECHARGE WELL	[Symbol]	RECHARGE SHAFT	[Symbol]	STORAGE TANK	[Symbol]	WELLS OBSERVED (WITH YIELD RANGE)	[Symbol]	DIKES	[Symbol]	ARTESIAN WELL	[Symbol]	<b>STRUCTURAL INFORMATION</b> <table border="1"> <tr> <th>DIPS</th> <th>BEDDING</th> <th>SCHISTOSITY / FOLIATION</th> </tr> <tr> <td>GENTLE (&lt; 15°)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>Moderate (15 - 45°)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>STEEP (45 - 80°)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>SUB-VERTICAL (&gt; 80°)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>ANTICLINE / ANTIFORM</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>SYNCLINE / SYNFORM</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>TREND LINE</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>ESCAPMENT</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>FAULT</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>THrust</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>Fracture / Lineament (Inferred)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>Shear Zone (Confirmed / Inferred)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>DYKE (Confirmed / Inferred)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>QUARTZ REEF (Confirmed / Inferred)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>PEGMATITE VEIN (Confirmed / Inferred)</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> </table>	DIPS	BEDDING	SCHISTOSITY / FOLIATION	GENTLE (< 15°)	[Symbol]	[Symbol]	Moderate (15 - 45°)	[Symbol]	[Symbol]	STEEP (45 - 80°)	[Symbol]	[Symbol]	SUB-VERTICAL (> 80°)	[Symbol]	[Symbol]	ANTICLINE / ANTIFORM	[Symbol]	[Symbol]	SYNCLINE / SYNFORM	[Symbol]	[Symbol]	TREND LINE	[Symbol]	[Symbol]	ESCAPMENT	[Symbol]	[Symbol]	FAULT	[Symbol]	[Symbol]	THrust	[Symbol]	[Symbol]	Fracture / Lineament (Inferred)	[Symbol]	[Symbol]	Shear Zone (Confirmed / Inferred)	[Symbol]	[Symbol]	DYKE (Confirmed / Inferred)	[Symbol]	[Symbol]	QUARTZ REEF (Confirmed / Inferred)	[Symbol]	[Symbol]	PEGMATITE VEIN (Confirmed / Inferred)	[Symbol]	[Symbol]	<b>BASE MAP INFORMATION</b> <table border="1"> <tr> <th>SYMBOL</th> <th>DESCRIPTION</th> </tr> <tr> <td>NH - 34</td> <td>NATIONAL HIGHWAY</td> </tr> <tr> <td>SH</td> <td>STATE HIGHWAY</td> </tr> <tr> <td>[Symbol]</td> <td>METALLED ROAD</td> </tr> <tr> <td>[Symbol]</td> <td>OTHER ROAD</td> </tr> <tr> <td>[Symbol]</td> <td>RAILWAY</td> </tr> <tr> <td>[Symbol]</td> <td>CITY / VILLAGE</td> </tr> <tr> <td>[Symbol]</td> <td>HABITATIONS - NON-COVERED (INC. 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